

REMARKS

Claims 1-38 are pending in the present application. In the Office Action mailed April 4, 2006, the Examiner rejected claim 1 under 35 U.S.C. §102(b) as being anticipated by Dumoulin et al (USP 5,375,598). Claims 2-13 were indicated as containing allowable subject matter. Applicant appreciates such indication.

The Examiner withdrew claims 14-38. Applicant filed on June 5, 2006 a Petition under 37 C.F.R. §1.144 requesting Supervisory Review of the restriction of claims 14-38. As set forth therein, it is believed that claims 14-38 should be rejoined for consideration in the present application.

Paragraphs 23, 31, 34, and 42 have been amended to correct for a minor typographical error. Particularly, “pulsality” has been replaced with “pulsatility” in all instances. No new matter has been added.

It is well-settled that there is no anticipation unless (1) all the same elements are (2) found in exactly the same situation and (3) are united in the same way to (4) perform the identical function. Since the Office Action’s citations to each of the applied references is missing at least one element of each the Applicant’s independent claim, Applicant respectfully submits that the claimed invention is not anticipated by the Office Action’s citation to the applied reference, as further discussed below.

Applicant respectfully submits that the Office Action’s citation to the applied reference, with or without modification or combination, assuming, *arguendo*, that the modification or combination of the Office Action’s citation to the applied reference is proper, does not teach or suggest one or more elements of the claimed invention, as further discussed below.

For explanatory purposes, Applicant discusses herein one or more differences between the applied reference and the claimed invention with reference to one or more parts of the applied reference. This discussion, however, is in no way meant to acquiesce in any characterization that the Office Action’s citation to the applied reference corresponds to the claimed invention.

Applicant respectfully submits that the applied reference does not teach or suggest one or more elements of the claimed invention. Claim 1 calls for, in part, an MR system with a computer programmed to generate phase-difference images from a first acquisition and a second acquisition, determine a non-zero background phase from the phase-difference images that are due to eddy currents induced by flow encoding gradients used to generate the phase-difference images, remove the non-zero background phase from the phase-difference images, and determine phase associated with flowing spins and phase associated with stationary spins. The technique is

a post-processing technique that is carried out after the acquisition of MR data. *Application, Para. 32 and Fig. 2.*

Dumoulin et al. discloses a method that uses MR to detect the distribution of velocities within a subject. *Dumoulin et al., Abstract.* At Col. 1, line 62 through Col. 2, line 6, Dumoulin et al. discloses:

Imaging of a selected component of shear rate is performed by repeating a pulse sequence a minimum of 4 times for each increment of a phase-encoding gradient 655a-d. In the first acquisition a positive polarity velocity-encoding gradient is applied 655a. In the second acquisition a negative polarity velocity-encoding gradient is applied 655b. During both the first and second acquisition the receiver and transmitter are operated at the same frequency. The third and fourth acquisitions are performed 655c, 655d in an identical fashion to the first and second acquisitions 655a, 655b, except that the center of the field-of-view is shifted by an amount, D, with respect to the first and second acquisitions.

Moreover, Dumoulin et al. discloses that since the first and second phase difference data sets contain velocity information from slightly different points in space, a shear rate image can then be computed by taking the phase difference of the first and second phase difference images. *Col. 2, lines 17-22.* Notably, Dumoulin et al. discloses a technique that is explicitly not a post-processing technique. Rather, Dumoulin et al. discloses a method that requires multiple acquisitions to detect the distribution of velocities.

Thus, Dumoulin et al. explicitly discloses an imaging technique different from that being claimed in the present application. Specifically, Dumoulin et al. discloses a method to detect velocities in MR where multiple pulse sequences are first applied with a selected polarity, then applied with a second polarity a second time to acquire a second set of response signals. Multiple acquisitions are performed by shifting the center of the field of view by an amount, D.

A careful reading of the applied reference reveals that the applied reference fails to teach or suggest, for example, determining a non-zero background phase from the phase-difference images that are due to eddy currents induced by flow encoding gradients. Furthermore, the applied reference fails to teach or suggest removing the non-zero background phase from the phase-difference images, and determining phase associated with flowing spins and phase associated with stationary spins. Finally, despite the heretofore differences already cited, in addition, Dumoulin et al. discloses a technique that requires multiple acquisitions to be performed. Such is not a post-processing technique as disclosed by Applicant wherein an automated background phase correction technique is set forth.

Consequently, since Dumoulin et al. does not disclose each and every element of claim 1, Applicant believes that claim 1 is in condition for allowance. Withdrawal of the §102 rejection is therefore respectfully requested. Further, upon rejoinder of claims 14-38, which also define over the art of record, Applicant believes that the present application is in condition for allowance. As a result, Applicant respectfully requests timely issuance of a Notice of Allowance for claims 1-38.

Applicant appreciates the Examiner's consideration of these Amendments and Remarks and cordially invites the Examiner to call the undersigned, should the Examiner consider any matters unresolved.

Respectfully submitted,

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